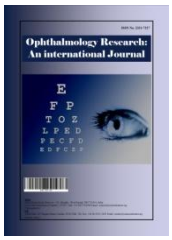

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Common Presenting Complaints and Predisposing Factors among Adult Ophthalmic Patients with Low Vision and Blindness in Aba

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aim: To determine the common complaints and predisposing factors of low vision and blindness among adult ophthalmic patients in Abia State University Teaching Hospital, (ABSUTH), Aba, Nigeria.
Study Design: A retrospective, descriptive study.
Methodology: An institutional-based study involving 457 patients who attended Abia State University Teaching Hospital eye clinic between April and September 2018 was undertaken. The patients' biodata, clinical history, ophthalmic examination findings, and results of ancillary investigations were obtained from patients' hospital records within the period under study and analyzed using IBM SPSS version 25.0. AP-value of < 0.05 was taken to be statistical significant.
Result: A total of 457 patients comprising of 206 males and 251 females, aged 18-85 years were seen in the study period. Based on World Health Organization (WHO)'s definition of low vision and blindness, two hundred and eighty-four (62.1%) patients had normal vision, 25(5.5%) patients had low vision while 32(7%) patients were blind. The most common complaint was blurring of vision, 136

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(23.5%) followed by itching of the eye, 91 (15.7%) and tearing, 86 (14.9%). Forty percent of the respondents' complaints had lasted for over 12 months before presentation at the clinic. Common predisposing factors for low vision and blindness observed in this study were hypertension (24.1%), previous drug use (5%), previous use of traditional medication (1.3%) and family ocular history (3.7%). No statistically significant association was found between diagnostic data and family ocular history, previous use of traditional medication and previous drug use. Statistically, significant relationship was found between diagnostic data and blood pressure (P< 0.001).

Conclusion: There are various presentations of low vision and blindness in Aba. Routine eye check, early referral and appropriate treatment is advocated for the populace.

Keywords: Predisposing factors; presenting complaints; low vision; blindness.

1. INTRODUCTION

Presenting complaint is the patient's problem or reason for hospital visitation. It allows identification of the problems by identifying the symptoms that lead to a diagnosis and, eventually to a specific treatment plan.

Predisposing factors to a disease condition are factors or conditions that render an individual vulnerable to a disease or disorder. They include genetic factors, life events, or temperament. They are characteristics, conditions or behaviors, such as high blood pressure or smoking that increase the possibility of disease or injury.

Low vision and blindness negatively affect the quality of life of an individual. They reduce the productivity and economic wellbeing of affected persons and their families. According to World Health Organization (WHO), [1] Low vision is defined as visual acuity (VA) of less than 6/18 but equal to or better than 3/60 or a corresponding visual field loss to less than 20^0, in the better eye with the best possible correction; blindness is defined as a presenting VA of worse than 3/60, or a corresponding visual field loss to less than 10^0, in the better eye with the best possible correction while 'visual impairment' includes both low vision and blindness [1].

Eighty percent of the information needed to perceive the world is delivered by the eye. It takes priority over all other senses [2]. Good vision contributes to improved athletic activity, better driving skills, improved learning and comprehension and better quality of life. Low vision and blindness can lead to immeasurable handicaps that are better prevented. Knowledge of the causes and predisposing factors of blindness, and low vision will be useful for the formulation and implementation of preventive vision theft factors.

The universal symptom of blindness and low vision is difficulty with seeing. Sudden vision loss is usually more symptomatic than the gradual loss of vision [3]. Presentation of visual impairment is dependent on the aspect of vision lost. With loss of central vision, there is difficulty in reading, problems with writing / completing paperwork, and inability to recognize distant objects and faces. When the peripheral vision is lost, there is difficulty in mobility and navigation as well as difficulty in reading. When there are cloudy media, there will be blurring of vision, reduced contrast and the glare.

Other presentations are smoky visions, floaters, discharge, double vision, foreign body sensation, redness of the eye, grittiness, tearing and pain.

In a study by Entekume et al. [4], Identified risk factors for functional low vision were increasing age, which was noted to increase significantly with every 10-year increase in age. The male gender, rural dwellers, illiteracy, unmarried and residing in the South-East geopolitical zone of Nigeria have also been identified as risk factors for functional low vision [4].

According to Dahl AA,[3], the principal risk factor for blindness is living in a third-world nation without ready access to modern medical care. Other risk factors identified include poor prenatal care, premature birth, advancing age, poor nutrition, failing to wear safety goggles, poor hygiene, smoking, family history of blindness, presence of various ocular diseases, medical conditions like diabetes mellitus, hyper-tension, cardiovascular and cerebrovascular diseases [3].

While literature abounds on the prevalence and causes of low vision and blindness, there is dearth of data on presenting complaints and

predisposing factors of same. This study aims to determine the predisposing factors and common presenting complaints of low vision and blindness among the patients. The knowledge of which will assist in formulation of effective preventive measures.

2. MATERIALS AND METHODS

2.1 Study Design

This was a retrospective, descriptive study spanning from April to September 2018. Case files of patients managed in the Ophthalmology unit of Abia State University Teaching Hospital for visual impairment were retrieved for data extraction.

2.2 Study Setting

Abia State University Teaching Hospital, Aba, is a 300-bed hospital that serves as a referral center for Aba and its environs and it is involved in training of middle and high-level man power for the health industry. It is located in Osisioma Local Government Area of Abia state which is a semi-urban area with a landmass of 198 Km^2 and a population of 219,632 as per the 2006 census data of Nigeria[5,6].

2.3 Inclusion Criteria

All adult patients with visual impairment who had complete records were included in the study. Those who had incomplete records were excluded.

The biodata were obtained. The visual acuity was assessed using Snellen's visual acuity chart (literate and illiterate E- chart), the uncorrected and best corrected visual acuities were recorded. Recorded visual acuity (VA) for a 6-meter distance, unaided and aided with pinhole or correction were noted. Clinical presentation, eye and laboratory examination findings and management of these cases were retrieved. In each case, clinical examination was done after obtaining a detailed history. The ophthalmological assessment included routine ocular examinations with special reference to visual acuity, findings on anterior and posterior segments examination assessed with a binocular indirect ophthalmoscope and or using digital slit- lamp biomicroscope which was done on dilatation of the pupil. Predisposing factors for low vision and blindness such as hypertension, previous drug use, previous use of traditional medication and positive family ocular history were noted. Other causes of low vision and blindness were also noted.

The patients' blood pressure (BP) and urine sugar were assessed with Accosons mercury sphygmomanometer and dipstick respectively.

2.4 Exclusion Criteria

Patients whose medical records had incomplete information were excluded from the study.

2.5 Data Analysis

Means and standard deviation were computed for continuous variables. Categorical data were analyzed using proportions. Tables were used to present the frequency distributions of the variables. Statistical significance was set at a P- value of < 0.05. IBM SPSS version 25.0 was used to analyze all data. Chi-square test was also used to test for associations between variables.

3. RESULTS

Table 1 is on the socio-demographic characteristics of the patients. The mean age was 48.5±17.7 years. A greater proportion of the respondents were above 40 years of age (61.1%) with a comparable male-to-female ratio (1:1.2). Nearly 40% of them were traders while 29% were professionals. The majority of the participants (88%) had no significant past medical history; however, 5.5% and 4.4% had hypertension and Diabetes mellitus respectively. The most-reported past ocular history was the use of glasses (20%) while 6 (1.3%) respondents had family ocular history of cataracts. The same proportion applied to a family history of glaucoma.

Table 2 shows the categorization of the patients based on visual acuity. A total of 284(62.1%) had normal vision, 25(5.5%) had a low-vision while 32(7%) had blindness in both eyes. There were 116(25.4%) patients with mixed conditions in both eyes.

Table 3 shows the common eye complaints of the patients and the duration of the complaints. The most common complaint was blurring of vision, 136 (23.5%) followed by itching of the eye, 91 (15.7%) and tearing, 86 (14.9%). Forty percent of the patients' complaints have lasted for over 12 months prior to presentation at the clinic.

In Table 4 is on patients' diagnoses, cataract-related diagnosis and refractive errors were the major diagnoses among the respondents (28.4% and 28.2% respectively). These were followed by glaucoma-related causes (14.7%), allergic conjunctivitis (10.3%),and pterygium (6.3%).

Table 1. Socio-demographic variables of patients

Variable	Frequency (n=457)	Percentage (%)
Age group (in years)		
<20-40	174	38.1
41-60	164	35.9
61-80	102	22.3
>80	17	3.7
Sex		
Male	206	45.1
Female	251	54.9
Occupation		
Professional	132	28.9
Business	168	36.8
Student	63	13.8
Artisan	55	12.0
Unemployed	39	8.5
Past medical history		
Hypertension	25	5.5
HTN/DM	6	1.3
DM	20	4.4
PUD	3	0.7
Asthma	1	0.2
None	402	88.0
Past ocular history		
Trauma	6	1.3
Glasses	92	20.1
Glasses/surgery	2	0.4
Surgery	15	3.3
None	342	74.8
Family ocular history		
Cataract	6	1.3
Cataract + Glaucoma	1	0.2
Glaucoma	6	1.3
Glaucoma + Blindness	1	0.2
Blindness	5	1.1
None	438	95.8
Family member with ocular condition		
Parent	10	2.2
Parent/sibling	2	0.4
Grandparent	1	0.2
Uncle/aunt	1	0.2
None	438	95.8

Mean age= 48.5 ± 17.7 years

Table 2. Aided visual acuity classifications of the patients

Aided VA	Category	No of Patients(N=457)	(%)
≥6/6 to 6/18	Normal Vision	284	62.1
< 6/18 to 6/60	Low Vision	25	5.5
<3/60 to NLP	Blindness	32	7.0
VA differ in both eyes	Mixed Category	116	25.4

NLP: No Light Perception

Table 3. Common complaints of the respondents and duration of complaints

Complaints	Frequency	Percentage (%)
Loss of vision	43	7.4
Blurring of vision	136	23.5
Trauma to the eye	12	2.1
Eye pain	37	6.4
Itching of the eye	91	15.7
Redness	68	11.7
Tearing	86	14.9
Grittiness	12	2.1
Discharge	17	2.9
Floaters	9	1.6
Double vision	6	1.0
Photophobia	12	2.1
Growth in the eye	11	1.9
Other symptoms	15	2.6
Associated symptoms	24	4.1
Duration of complaints(in months)		
<6	159	34.1
6-12	111	23.8
>12	187	40.1

Table 4. Patients' diagnoses/ predisposing factors

Diagnoses	Frequency (n=457)	Percentage (%)
Cataract-related	130	28.4
Glaucoma-related	67	14.7
Refractive errors	129	28.2
Pterygium	29	6.3
Corneal opacity	9	2.0
Trauma	8	1.8
Allergic conjunctivitis	47	10.3
Others	38	8.3

Common predisposing factors for low vision and blindness observed in this study (Table 5) were, hypertension (24.1%), previous drug use (5%), previous use of traditional medications (1.3%) and family ocular history (3.7%).

The association between diagnostic data of patients and predisposing factors for low vision and blindness is highlighted in Table 6. No statistically significant association was found between diagnostic data and family ocular history. Statistically, significant relationship was found between diagnostic data and blood pressure as well as previous use of traditional eye medication ($P< 0.001$).

4. DISCUSSION

This is a hospital-based study involving visually impaired patients. Though it may not be representative of the general population, its strength lies in the fact of availability of detailed ophthalmic history/findings when compared to population studies, blind school studies and blind registrars' studies [7,8].

The mean age of the study population was 48.5±17.7 years. The age group 20-40 had the highest number of subjects in this study (38.1%). There was a decreasing number of patients with an increase in age group. This is a reflection of population distribution in this environment which is skewed towards the younger age group. The gender distribution ratio was 1:1.2 in favor of females. The greater number of females may be due to the higher health-seeking tendency of females. It may also be attributed to the fact that females have a higher life expectancy, and thus are more in number in the general population [9].

Table 5. Predisposing factors of low vision and blindness

Variable	Frequency (n=457)	Percentage (%)
Blood pressure		
Normal	110	24.1
Hypertension	347	75.9
Previous drug use		
No	434	95.0
Yes	23	5.0
Previous use of traditional eye medications		
No	451	98.7
Yes	6	1.3
Family ocular history		
Yes	17	3.7
No	440	96.3

Table 6. Relationship of predisposing factors of low vision/blindness and diagnoses Diagnostic data (N %)

Variables	Cataract-related	Glaucoma-related	Refractive error	Allergic conjunctivitis	Others	χ^2	p-value
Blood pressure							
Normal	15(11.5)	10(14.9)	41(31.8)	22(46.8)	22(26.2)		
Hypertension	115(88.5)	57(85.1)	88(68.2)	25(53.2)	62(73.8)	31.938	0.000**
Previous drug use							
No	124(95.4)	64(95.5)	122(94.6)	46(97.9)	78(92.9)		
Yes	6(4.6)	3(4.5)	7(5.4)	1(2.1)	6(7.1)	1.546*	0.830
Ever used traditional eye medications							
No	128(98.5)	67(100.0)	129(100.0)	47(100.0)	80(95.2)		
Yes	2(1.5)	0(0.0)	0(0.0)	0(0.0)	4(4.8)	7.203*	0.034**
Family ocular history							
Yes	4(3.1)	6(9.1)	4(3.1)	1(2.1)	2(2.4)		
No	126(96.9)	60(90.9)	124(96.9)	46(97.9)	82(97.6)	4.835*	0.273

**Fisher's test **Statistical significance*

Traders, professionals and students were the commonest occupation in decreasing frequency. This is a reflection of occupation distribution in Aba which is mainly a commercial city and lately has been described as a hub for small and medium scale enterprises [10].

In this study, the majority of the patients' presenting complaints were blurring of vision, itching of the eye and tearing constituting 23.5%, 15.7% and 14.9% respectively. Other presenting complaints were redness of the eye, loss of vision, eye pain, eye discharge, trauma to the eye, photophobia, growth in the eye, floaters and double vision were noted in decreasing order of frequency as shown in Table 3.

This is dissimilar to studies by Freeman et al [11] in which difficulty in reading, driving, mobility, performing in-home activities and facial recognition as well as having to use visual assistive equipment and experiencing glare were the most common functional complaints.

Significant in the past ocular history of patients is the use of glasses. Twenty percent of study population had a positive history of the use of glasses. Medicated glasses were prescribed for diverse reasons like myopia, hypermetropia and presbyopia. Uncorrected refractive errors are the most common causes of visual impairment worldwide [12]. Myopia and hypermetropia could be genetic in transmission. Presbyopia however, is age related visual impairment caused by loss of the eye's ability to focus actively on nearby objects as a result of physiological change in the crystalline lens of an adult eye with consequence loss of the amplitude of accommodation. This results in an inability to focus at the near distance the eye had hitherto been accustomed to [13].

There was a positive family history of cataracts and glaucoma in 1.5% and 1.7% of patients respectively. These are the leading causes of visual impairment in this environment and indeed worldwide [14]. Family history is a major risk factor for development of cataract and glaucoma [15].

In this study, the duration of presenting complaints was divided into 3: less than 6 months duration, 6-12 months and greater than 12 months duration. The greatest number of patients presented after 12 months (40.1%). Late presentation is usually contributory to the poor outcome of patient management in this environment as some eye lesions like ocular trauma, corneal ulceration, and retinal detachment need immediate intervention to prevent loss of vision.

Among the patients, 95% had no history of previous drug use, 5% had previously used eye medications which were mostly sourced from the chemist shop (39.1%) and 1.3% of patients had used traditional eye medications. The use of over the counter drugs and traditional eye medications is common as they are believed to be more readily assessable [16].

Hypertension, use of drugs, use of traditional eye medications and family ocular histories were evaluated as possible predisposing factors to low vision and blindness. Hypertension and the use of traditional eye medications were found to be statistically significant predisposing factors to low vision and blindness.

In this study, 6.8% of patients were hypertensive. This is dissimilar to a study by Wang et al [17] in which 24.5% of the study population were hypertensive. Systemic hypertension is a risk factor for several vision-threatening eye conditions including retinal vascular occlusion, retinal macroaneurysm, and non-arteritic anterior ischemic optic neuropathy. It also exacerbates the vision-threatening effect of diabetic retinopathy and macula degeneration [18].

5. CONCLUSION

The common complaints of patients in the study population were blurring of vision, itching of the eye and tearing. The predisposing factors to low vision and blindness were hypertension and use of traditional eye medication. These are needed establish and maintain an appropriate effective preventive and curative eye care program in Aba.

6. RECOMMENDATION

There is need for collaboration between ophthalmologists, general practitioners and physicians so that vision-threatening medical conditions are promptly and adequately treated.

CONSENT

As per international standard or universal standard, patient's written consent has been collected and preserved by the authors.

Confidentiality of patients' information was ensured.

ETHICAL APPROVAL

Ethical approval for this study was obtained from the Ethical and review committee of the hospital.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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